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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/557,696	04/25/2000	Xiangxin Bi	N19.12-0035	8550
24113	7590	03/11/2005	EXAMINER	
PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A. 4800 IDS CENTER 80 SOUTH 8TH STREET MINNEAPOLIS, MN 55402-2100			GORDON, BRIAN R	
		ART UNIT	PAPER NUMBER	
		1743		

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/557,696	BI ET AL.	
Examiner	Art Unit		
Brian R. Gordon	1743		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 12 January 2005.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-14, 39-52, 58-68 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-5, 8-14, 39, 42-52, 58-60, 62-65, and 67-68 is/are rejected.

7)  Claim(s) 6,7,40,41,61 and 66 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1-12-05.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_ .

## **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on January 12, 2005 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 45-47, 49-50 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 45 recites the limitation "the crystal structure" in line 2. There is insufficient antecedent basis for this limitation in the claim.

The type of product produced is not established (solid, liquid, gas) therefore one can assume that the product inherently has a crystal structure.

Claim 46 is indefinite for the type of product produced has not been established. There is no previous recitation of the product comprising solid particles. One could simply assume the product is liquid.

5. Claim 47 recites the limitation "the optical properties" in line 2. There is insufficient antecedent basis for this limitation in the claim.
6. Claim 49 recites the limitation "the electroactive properties" in line 2. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 50 recites the limitation "the electrical or magnetic properties" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claims 1-5, 10-14, 39, 42-44, 47-48, 51-52, 58-60, 62-65 and 67-68 are rejected under 35 U.S.C. 102(a) as being anticipated by Palmer et al. WO 99/30817.

Palmer et al. discloses a method and an apparatus for chemical synthesis, which includes the following technical features (see pages 6-13 of the description, and Fig. 1): transferring reagents (equivalent to the first quantity of fluid reactants) in a reagent reservoir into a reaction chamber to react (equivalent to forming a first quantity of product composition) via a pipeline 3; directing the reactants to a detector via a barrier and a fluid pathway 6 that collects product in two different directions (equivalent to collecting the first quantity of product composition using a collector); transferring an aqueous fluid/reagents (equivalent to the second quantity of fluid reactants) for use of screen into a corresponding reaction chamber via the pipeline 3; lastly, directing the

product (equivalent to the second quantity of product composition) to the detector via the barrier and a pipeline 6 (equivalent to collecting the second quantity of product composition using a collector); wherein the pipeline 6 is equivalent to a plurality of collectors. The switching valve 3 allows for the products to be collected in the different receptacles (page 12 lines 8-14). The products are screened/evaluated by the detector 10 after leaving the pathway 6 (page 12, lines 16-18). The detector may be a laser/CCD detector the employs fluorescence to determine the degree of inhibition of the product on the assay (page 13, lines 1-5).

It is clear the device contains a plurality of inlets as indicated in step a) on page 6, line 16.

It is also disclosed that the reactions are performed in the sealed chambers under different reaction conditions (page 7, lines 3-6). The conditions (temperature, pressure, agitation, etc. (page 8, lines 19-22) may be varied as indicated.

The device employs a pressurized fluid delivery system (pump) and switching valves to move the reactants through the system (page 9 lines 9-19).

It is inherent that if different reagents are combined in different processes different products are yielded.

The process may employ a number of different reactants (vapors and aerosols) to perform different reaction processes (page 10, line 11-16). The reactants may comprise polymer colloid metal particles (page 10, line 29).

The additional technical feature of claim 12 has been disclosed in reference 2 (see pages 6-13 of the description; and Fig. 1): directing products from synthesis and

screening to the detector, which implies evaluating the properties of the first quantity of product composition and the second quantity of product composition.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmer et al. as applied to claims 1-5, 10-14, 39, 42-44, 47-48, 51-52, 58-60, 62-65 and 67-68 above, and further in view of Gardner, WO 00/00312.

Gardner discloses a particle synthesis and collection system further comprising a laser pyrolysis apparatus; a laser beam path 406 enters a reaction chamber 404 through a window; and reactions in the reaction chamber include laser pyrolysis (page 21 lines 21-30 and Figures 1 and 9). The laser 420 is disclosed as being an infrared laser (page 22, lines 12-14).

It would have been obvious to one of ordinary skill in the art at that the time of the invention to employ the infrared laser as taught by Gardner in order to produce small particles on the order of less than about 1000nm.

***Allowable Subject Matter***

14. Claims 6-7, 40-41, 61, and 66 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. Claims 45-46 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach nor fairly suggest a process in which the nozzle remains fixed and the collectors are moved relative to the nozzle or wherein the collectors remain fixed and the nozzle is moved relative to the collectors; the first and

second quantities of products comprising a metal; evaluating the crystal structure of the product by x-ray diffraction, the particle size of the product by dynamic light scattering, measuring electroactive and electrical or magnetic properties of the product.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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